REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application. Claims 1-60 are pending in the application.

Applicant thanks the Examiner for the detailed analysis presented in the Office Action.

Claim Rejections under 35 U.S.C. § 112

Claim 11 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claim 11 is amended to cure the cited deficiency.

Claim Rejections under 35 U.S.C. § 102

Claims 1, 3-5, 7, 9-10, 15-17, 19-21, 23, 29, 31-32, 36-37, 39-42, and 45-48 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,307,541 to Ho et al. (hereinafter, "Ho"). Applicant respectfully traverses the rejection.

Claim 1 defines a mobile device, comprising:

> a keypad of number keys, the number keys having associated letters;
>
> a language system to receive an input string entered via the keypad that is representative of one or more phonetic characters and generate likely language characters based on the input string;
>
> a display to present the likely language characters for user selection; and
>
> the language system being configured to facilitate input of the input string and selection of a language character without switching modes between input and selection.

As described in one exemplary implementation in the subject application, Applicant's claimed system constructs a phonetic character through input of a string of letters by pressing the corresponding lettered keys of the keypad. For example, to input the phonetic Pinyin text "mi" or "ni", the user would press 6 to input "m" or "n" and then 4 to yield "mi" or "ni". With each input, the mobile phone presents possible language characters. The available choices are indexed by specifically chosen keys that have associated letters of the alphabet that do not follow the phonetic characters already entered. Continuing the above example, after the user enters "64", keys 1, 4, 5, 7, and 9 are chosen as selection keys because the letters associated with digits 4 (GHI), 5 (JKL), and 7 (PQRS) (note that digits 1 and 9 do not have any associated letters) would not follow a Pinyin string of "mi" or "ni". The possible language characters (e.g., Chinese Hanzi characters) are thus assigned to the selection keys 1, 4, 5, 7, and 9. If the user sees a word that he/she wants to input, the user can directly press any one of the keys 1, 4, 5, 7, and 9 for immediate selection of the corresponding language character.

The remaining keys 2, 3, 6, and 8 continue being input keys because they correspond to phonetic characters that still might be entered. For example, following entry of "mi" or "ni" by pressing keys 6 and 4, the user may be intending to enter the Pinyin text "min" or "nin". Thus, pressing the key 6 again will form a three digit input of 6, 4, 6 for further input of phonetic text to yield "min" or "nin", rather than selection of a converted character.

Accordingly, depending upon the user's input, the device dynamically adjusts which keys are used to index possible language characters and which keys are used to receive further phonetic text, thereby allowing differentiation between the user's input of an additional phonetic text and the user's confirmation of an

intended converted language character. In this manner, the user need not switch modes between input and selection, as they are seamlessly integrated.

Ho does not disclose the claimed mobile device. Ho describes a device that allows input of Chinese characters using a reduced keypad set (e.g., 12 keys on a mobile-phone handset), but the keys merely reference phonetic symbols displayed, in one-to-one correspondence, as part of virtual keyboards depicted on an LCD located above the keypad. The virtual keyboards are arranged in relational layers (e.g., according to the Mandarin Phonetic-Symbol Combination Rules) and used collectively to display a set of phonetic symbols. (*Ho*, Abstract and Summary). There are four layers of virtual keyboards that collectively hold a set of 42 phonetic symbols. (*Ho*, col. 4, lines 51-66, and col. 7 line 65 to col. 8, line 38). Only one virtual keyboard is shown on the LCD at a time.

When activated, the LCD displays one of the virtual keyboards from the first layer. The user can selectively switch among the three virtual keyboards in the first layer by pressing a key (e.g., "*" key) that maps to a "VK" (virtual keyboard) space in the virtual keyboard on the LCD. After one phonetic symbol is selected from a first-layer virtual keyboard, all subsequent virtual keyboards are presented in accordance with the relations in the Mandarin Phonetic-Symbol Combination Rules (*Ho*, col. 8, lines 39-51).

Like the prior art, Ho describes a bi-modal input and selection technique in which the user must switch between an input mode and a selection mode. As shown in Figs. 6 and 7, the input of all desired symbols from the virtual keyboards must be completed prior to searching for and presenting a Chinese character. (*Ho*, Fig. 6, decision block 603, and Fig. 7, decision block 706). Once that input is complete, Ho then retrieves the Chinese character from a database that

corresponds to the pre-defined symbols in the virtual keyboards. In this way, Ho requires switching between input mode and selection mode. Thus, Ho effectively represents the very prior art that Applicant sought to overcome.

Therefore, Ho does not disclose a mobile device having "a language system to receive an input string entered via the keypad that is representative of one or more phonetic characters" wherein the language system is "configured to facilitate input of the input string and selection of a language character without switching modes between input and selection."

The Office argues that the claimed language system is shown in Fig. 6 and accompanying text in col. 12, lines 25-46. (*Office Action*, Page 3). Applicant disagrees. As noted above, Ho's process in Fig. 6 shows that the device first determines whether a complete phonetic-symbol combination is input *prior to even finding* a corresponding Chinese character. Decision block 603 in Fig. 6 makes this determination. Only after a complete combination is input (i.e., a "Yes" from block 603) does the device then locate the corresponding Chinese symbol from database 410 and present it to the user. Hence, Ho describes a mode switching technique where input must be complete before any selection of a character is possible. After selection, the user then switches back from language character selection to input of the next phonetic character using the virtual keyboards.

For this reason, claim 1 is allowable over Ho. Applicant respectfully requests that the §102 rejection be withdrawn.

Dependent claims 3-5, 7, 9-10, and 15-16 depend from claim 1 and are allowable by virtue of this dependency. Moreover, these claims recite features

that, when taken together with those of claim 1, define devices not disclosed by Ho.

For example, **dependent claim 3** states "the likely language characters are presented on the display in an index that associates selection keys of the keypad with the language characters so that user entry of a selection key results in a selection of a corresponding language character and user entry of a non-selection key results in further input." Ho does not disclose this feature. Ho's keys are used to select the corresponding symbol in the virtual keyboard. Nowhere does Ho describe having certain keys of the keypad being used for selection of a language character and other keys of the keypad used for further input of the phonetic characters. For this additional reason, claim 3 is allowable over Ho.

The Office argues that the index is described in Ho at column 8, lines 39-51. However, this excerpt merely notes that the 12 keys are mapped in one-to-one correspondence with the 12 spaces in the virtual keyboards. (*Ho*, Fig. 2). But, nowhere in this excerpt does Ho describe that a portion of the 12 keys are associated with possible language characters so that user entry of one of these "selection" keys results in a selection of a corresponding language character, while the remaining portion of the 12 keys are used for further input. Indeed, Ho does not even present a Chinese character until after the entire phonetic combination is input (*Ho*, Figs. 6 and 7). Thus, Ho's device would never need to allocate certain keys to be selection keys, while retaining other non-selection keys for further input.

Dependent claim 4 requires "the selection keys being selected based on whether the letters associated therewith follow the phonetic characters already entered." Ho fails to disclose this feature. Since Ho uses virtual keyboards for

input and not the corresponding letters of the keys, Ho is not concerned with choosing selection keys based on whether the letters associated therewith follow the phonetic characters already entered. For this additional reason, claim 4 is allowable over Ho.

The Office cites column 11, lines 47-55 as support. This excerpt discusses Fig. 3 and a relationship between the virtual keyboards and the phonetic symbols, and that within each keyboard, the symbols are assigned a unique key value. Nowhere in this excerpt does Ho discuss the idea of using some of the keys as selection keys and others of the keys as further input keys, nor how the keys would be allocated for these two different tasks.

Dependent claim 7 requires that the language system include "a language model to statistically derive the language characters." Ho does not disclose this feature. The Office points to the virtual keyboard table 420 in support of its rejection. However, this table merely stores the four layers of virtual tables. These tables are pre-constructed according to the Mandarin Phonetic Symbol Set. Ho further utilizes a Chinese-character database 410 that stores a set of Chinese characters and the mapping between each Chinese character and it phonetic-symbol combination based on the Mandarin Phonetic Symbol Set. Once a phonetic symbol is selected, the corresponding Chinese character that maps to the symbol is retrieved from the Chinese-character database 410. (*Ho*, Fig. 4, col. 11, lines 61-67 and col. 12, lines 25-45). Ho thus describes a relatively straight-forward lookup mechanism. Accordingly, Ho does not employ a language model to "statistically derive the language characters" as required by claim 7. For this additional reason, claim 7 is allowable over Ho.

Dependent claim 10 recites that "the language system includes a direct key-based search engine that generates the language characters based on a key sequence entered on the keypad in lieu of converting the phonetic characters to the language characters." Ho does not disclose this aspect. As noted above, Ho employs a set of virtual keyboards. Entering a phonetic character involves a combination of switching among virtual keyboards and selecting items from virtual keyboards. Thus, the key sequence may vary even when entering the same phonetic symbol. Once the phonetic character and tone is selected, Ho employs a mapping to find the corresponding Chinese character in the Chinese-character database 410. Therefore, Ho does not employ "a direct key-based search engine that generates the language characters based on a key sequence entered on the keypad" as required by claim 10. For this additional reason, claim 10 is allowable over Ho.

Dependent claim 15 recites "a scroll control key to present other likely language characters." Ho does not disclose this aspect. Since Ho uses a pre-defined set of phonetic symbols that map to a pre-defined set of Chinese characters, Ho simply presents the corresponding Chinese character mapping to the selected phonetic symbol. Ho never presents other likely candidates because there are none. With the pre-stored and pre-mapped arrangement (i.e., no statistical modeling), Ho simply performs a retrieval process and presents the retrieved Chinese character(s). There is no need for "a scroll control key to present other likely language characters." For this additional reason, claim 15 is allowable over Ho.

The Office points to buttons 221 and 222 of Ho's device as disclosing this aspect. While these buttons may be used to perform many functions, there is no

disclosure or teaching in Ho that these buttons are configured as "a scroll control key to present other likely language characters" as required by claim 15.

Independent claim 17 defines a mobile device comprising "a keypad of number keys, the number keys having associated letters of an alphabet" and "a direct key-based search engine that generates possible language characters that are not part of the alphabet based on a key sequence entered on the keypad." For the reasons given above with respect to claims 10, Ho does not disclose a device that utilizes the claimed direct key-based search engine. Applicant respectfully requests that the §102 rejection of claim 17 be withdrawn.

Dependent claims 19 and 20 depend from claim 17 and are allowable by virtue of this dependency. Moreover, these claims recite features that, when taken together with those of claim 17, define mobile devices not disclosed by Ho. For example, **claim 19** requires "an association module that automatically presents the language characters as the user depresses individual keys." Ho does not disclose this feature. As shown in Figs. 6 and 7, Ho does not present the language character until all input of the phonetic symbols and tones from the virtual keyboards is completed. Thus, as individual keys are depressed to step through the virtual keyboards, Ho does not present the language characters. For this additional reason, claim 19 is allowable over Ho.

Independent claim 21 defines a mobile device, comprising:

> a keypad of number keys, the number keys having associated letters of an alphabet;
>
> an association module that associates a key sequence with language characters that are not part of the alphabet; and
>
> a display to present the possible language characters as the user depresses individual keys based on the key sequence.

Ho does not disclose this device. Since Ho employs a set of virtual keyboards, entering a phonetic character involves a combination of switching among the virtual keyboards and selecting items from certain virtual keyboards. Due to this toggling among the virtual keyboards, the key sequence may vary even when entering the same phonetic symbol. Once the phonetic character and tone is selected, Ho employs a mapping to find the corresponding Chinese character in the Chinese-character database 410. Thus, Ho does not disclose an "association module that associates a key sequence with language characters" as recited in claim 21.

Furthermore, Ho does not present the language character until after all of the phonetic symbols and tones from the virtual keyboards have been input. (*Ho*, Fig. 6, decision block 603, and Fig. 7, decision block 706, and accompanying text). Accordingly, Ho does not disclose "a display to present the possible language characters as the user depresses individual keys based on the key sequence" as recited in claim 21.

For these reasons, Ho does not anticipate claim 21 and the §102 rejection should be withdrawn.

Dependent claim 23 depends from claim 21 and is allowable by virtue of this dependency.

Independent claim 29 defines a method comprising "receiving an input string entered via a keypad", "presenting likely language characters based on the input string", and "facilitating continued entry of the input string and selection of a suitable language character without switching modes between input and selection."

As noted above with respect to claim 1, Ho requires mode switching. As illustrated in the process diagrams of Figs. 6 and 7, Ho requires that all input be completed prior to a search and presentation of Chinese characters. Accordingly, Ho does not "present[] likely language characters based on the input string" and "facilitat[e] continued entry of the input string and selection of a suitable language character without switching modes between input and selection."

Applicant respectfully requests allowance of claim 29.

Dependent claims 31-32 and 36 depend from claim 29 and are allowable by virtue of this dependency. Claims 31 and 32 further benefit from the arguments presented above with respect to claims 3 and 19 respectively.

Independent claim 37 requires:

> receiving an input string entered via a numeric-based keypad where number keys in the keypad have associated letters in an alphabet, the input string being representative of one or more phonetic characters;
>
> converting the input string of phonetic characters to possible language characters that are not part of the alphabet; and
>
> presenting the language characters using an index that associates selection keys of the keypad with the language characters, the selection keys being chosen based on whether the letters associated with the selection keys are likely to follow the phonetic characters already entered.

Ho does not disclose this claimed structure. As noted previously, Ho uses virtual keyboards for input of phonetic symbols. Depressing a key merely selects the one-to-one corresponding item in the virtual keyboard. Ho does not construct a phonetic character by inputting a string of letters from the depressed keys. Hence, Ho is not concerned with whether the next key depressed is further input to

a string, or selection of a converted character. Therefore, Ho does not disclose "presenting the language characters using an index that associates selection keys of the keypad with the language characters" whereby the selection keys are "chosen based on whether the letters associated with the letters associated with the selection keys are likely to follow the phonetic characters already entered."

For these reasons, claim 37 is allowable over Ho and the §102 rejection should be withdrawn.

Dependent claims 39-42 depend from claim 37 and are allowable by virtue of this dependency. Claims 41 and 42 further benefit from the arguments presented above with respect to claims 19 and 7 respectively.

Independent claim 45 defines a method comprising "facilitating entry of phonetic characters via discrete keys of a keypad" and "generating possible language characters intended by the user based on a key sequence entered on the keypad in lieu of converting the phonetic characters to the language characters."

Ho does not disclose this method. With Ho's device, a user enters a phonetic character by switching among virtual keyboards and selecting items from the virtual keyboards. Thus, the key sequence may vary even when entering the same phonetic symbol. Once the phonetic character and tone are finally selected, Ho finds the Chinese character in the Chinese-character database 410 that corresponds to the phonetic character and tone from the virtual keyboards kept in database 420. Therefore, Ho does not "generat[e] possible language characters intended by the user based on a key sequence entered on the keypad..." as required by claim 45.

For these reasons, claim 37 is allowable over Ho and the §102 rejection should be withdrawn.

Dependent claim 46 depends from claim 45 and is allowable by virtue of this dependency.

Independent claim 47 defines a method comprising:

> receiving key entries entered via a numeric-based keypad where number keys in the keypad have associated letters;
>
> associating strings of key entries with language characters that are different than the letters; and
>
> presenting likely language characters intended by the user as the user depresses individual keys.

For the reasons given above with respect to claim 21, Ho fails to anticipate the method of claim 47, including "associating strings of key entries with language characters that are different than the letters" and "presenting likely language characters intended by the user as the user depresses individual keys." The §102 rejection should be withdrawn.

Dependent claim 48 depends from claim 47 and is allowable by virtue of this dependency.

Claim Rejections under 35 U.S.C. §103

The remaining claims are rejected under a set of §103 rejections, all of which rely on Ho as the primary reference. Most of these claims depend from base claims addressed above. Claims 24, 27, 49, and 51 are independent and will be addressed below in more detail.

Ho + Hon

Claims 2, 18, 22, 30, and 38 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ho in view of U.S. Publication No. 2001/0044724 to Hon et al. (hereinafter, "Hon"). Applicant respectfully traverses the rejection.

Claims 2, 18, 22, 30, and 38 depend from respective independent claims 1, 17, 21, 29, and 37. As such, they include the features recited in these base claims. The combination of Ho and Hon fails to teach or suggest the features of these base claims from which the cited claims depend. Ho is primarily cited as teaching the base features, and Hon is cited as teaching use of Chinese Pinyin as phonetic characters and Chinese Hanzi as the language characters.

With respect to **dependent claim 2,** neither reference discloses a mobile device in which "the language system [is] configured to facilitate input of the input string and selection of a language character without switching modes between input and selection" as required by claim 1 from which claim 2 depends. Ho specifically teaches operating in two separate modes—input and selection—and the need to switch between them. As shown in the process diagrams of Figs. 6 and 7, an input phase is performed first, and then subsequently a selection phase. The user is not permitted to perform selection until switching from the input phase after all input of phonetic symbols in complete, as exhibited by decision block 603 in Fig. 6 and decision block 706 in Fig. 7. Essentially, Ho represents the very prior art that Applicant sought to overcome.

Hon offers no missing teaching. Accordingly, the combination of Ho and Hon fails to teach or suggest the device of claim 2. Applicant respectfully requests that the §103 rejection of claim 2 be withdrawn.

With respect to **dependent claim 18**, neither reference discloses a "direct key-based search engine that generates possible language characters that are not part of the alphabet based on a key sequence entered on the keypad" as required by claim 17 from which claim 18 depends. Ho maps phonetic symbols stored in one table to Chinese characters stored in a database. Thus, input of the phonetic symbols correlates to identity of the corresponding Chinese characters. Ho therefore does not teach or suggest use of claimed "direct key-based search engine that generates possible language characters . . . based on a key sequence entered on the keypad." Indeed, Ho teaches away from the claimed device in that a user can enter different key sequences when toggling and selecting among the virtual keyboards, and yet still result in the same Chinese character.

Again, Hon offers no missing teaching. Accordingly, the combination of Ho and Hon fails to teach or suggest the device of claim 18. Applicant respectfully requests that the §103 rejection of claim 18 be withdrawn.

With respect to **dependent claim 22**, for the reasons just given, neither reference teaches or suggests "an association module that associates a key sequence with language characters that are not part of the alphabet."

Secondly, neither Ho nor Hon suggest a mobile device having "a display to present the possible language characters as the user depresses individual keys based on the key sequence." Ho only depicts the Chinese character after all input is complete (see Figs. 6 and 7), not as the user depresses individual keys used to input the phonetic characters. Hon offers no relevant teaching. Accordingly, the combination of Ho and Hon fails to teach or suggest the device of claim 22.

With respect to **dependent claim 30**, neither reference teaches or suggests a method that includes "facilitating continued entry of the input string and

selection of a suitable language character without switching modes between input and selection" as recited in claim 29 from which claim 30 depends. As noted above for claim 2, Ho discloses a process in which the user must switch modes between input and selection. Hon is silent as to this feature. Accordingly, the combination of Ho and Hon fails to teach or suggest the method of claim 30.

With respect to **dependent claim 38,** neither reference teaches or suggests "presenting the language characters using an index that associates selection keys of the keypad with the language characters, the selection keys being chosen based on whether the letters associated with the selection keys are likely to follow the phonetic characters already entered" as recited in claim 37 from which claim 38 depends.

Ho teaches use of virtual keyboards for input of phonetic symbols. Depressing a key merely selects the one-to-one corresponding item in the virtual keyboard. Ho does not construct a phonetic character by inputting a string of letters from the depressed keys. Hence, Ho is not concerned with whether the next key depressed is further input to a string, or selection of a converted character. Therefore, Ho does not teach or suggest "an index that associates selection keys of the keypad with the language characters" whereby the selection keys are "chosen based on whether the letters associated with the letters associated with the selection keys are likely to follow the phonetic characters already entered."

Hon is silent as to this feature, and thus adds no teaching to Ho. For these reasons, claim 38 is allowable over the cited combination.

Ho + Chang

Claims 6, 24, 26, 33, 49, and 50 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ho in view of U.S. Patent No. 5,987,447 to Chang et al. (hereinafter, "Chang"). Applicant respectfully traverses the rejection.

Chang is cited as teaching a language system that includes a sentence-based search engine. Chang provides no teaching as to a language input system and method for a mobile device.

Dependent claim 6 depends from claim 1, and hence includes the features therein. Ho does not teach or suggest a "language system being configured to facilitate input of the input string and selection of a language character without switching modes between input and selection" as required by claim 1. As noted above, Ho requires mode switching between input and selection. Chang fails to add any relevant teaching with respect to this feature. Accordingly, the combination of Ho and Chang fails to teach or suggest the device of claim 6.

Independent claim 24 is amended to clarify that the input string is formed of letters from the alphabet entered by associated number keys on the keypad. As amended, claim 24 defines a mobile device comprising:

> a keypad of number keys, the number keys having associated letters of an alphabet;
>
> a language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad, where the input string of letters is representative of one or more phonetic characters, and to convert the phonetic characters to language characters that are not part of the alphabet using a statistical language model that utilizes at least one neighboring word in a common; and
>
> a display to present the language characters for user selection.

Neither Ho nor Chang teaches or suggests a mobile device having "a language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad, where the input string of letters is representative of one or more phonetic characters" as required by claim 24. In contrast, Ho receives specific phonetic symbols selected from pre-defined virtual keyboards. The user does not enter a string of letters from the keypad to define the phonetic characters. Chang is equally silent as to this feature. For this reason alone, claim 24 is allowable over the cited combination of Ho and Chang.

Furthermore, neither reference teaches a mobile device having a language system to "convert the phonetic characters to language characters that are not part of the alphabet using a statistical language model that utilizes at least one neighboring word in a common." The Office admits that Ho does not teach this feature, and thus relies on Chang for this feature. (*Office Action*, page 7). However, the Office fails to describe how this combination would be made or how the references themselves suggest such a combination. Ho would have to be severely modified, much beyond its teachings, in order to implement the system of Chang.

Ho teaches a simple database correlation between a pre-defined set of phonetic symbols stored in pre-defined virtual keyboard table 420 and the Chinese characters stored in Chinese-character database 410. (*Ho*, Fig. 4). Ho provides no teaching of a language system that employs a "statistical language model." By using the pre-defined character set and mapping scheme, Ho has no need for such a model. A skilled artisan, given the express teachings of Ho, would not then eliminate this easy lookup technique to employ an entirely different model as taught by Chang.

Accordingly, Applicant requests that the §103 rejection be withdrawn. If the rejection is maintained, Applicant requests that the Office provide more description as to how the teachings of these references would be combined.

Dependent claim 26 depends from claim 24 and is allowable by virtue of this dependency.

Dependent claim 33 depends from claim 29, and hence includes the features therein. For the reasons given above with respect to claim 6, the combination of Ho and Chang fails to teach or suggest "facilitating continued entry of the input string and selection of a suitable language character without switching modes between input and selection" as required by claim 33 by virtue of its dependence on claim 29.

Independent claim 49 is amended to clarify that the input string is formed of letters from the alphabet entered by associated number keys on the keypad. Claim 49, as amended, recites a method comprising:

> receiving an input string of letters entered via a numeric-based keypad where number keys in the keypad have associated letters, the input string of letters being representative of one or more phonetic characters;
>
> converting the input string of letters that represent the phonetic characters to possible language characters based upon a context of at least one word in a sentence within which the input string is a part; and
>
> presenting the possible language characters for selection by the user.

For the reasons given above with respect to claim 24, the Ho/Chang combination does not teach or suggest this method. The §103 rejection should be withdrawn.

Dependent claim 50 depends from claim 49, and is allowable by virtue of this dependency.

Ho + Kantrowitz

Claim 8 is rejected under 35 U.S.C. § 103 as being unpatentable over Ho in view of U.S. Patent No. 6,292,772 to Kantrowitz (hereinafter, "Kantrowitz"). Applicant respectfully traverses the rejection.

Dependent claim 8 depends from claim 1 and further requires that the language system include "a character-based bigram language model and a word-based N-gram language model, where N>2." The Office recognizes that Ho does not teach these aspects, but cites Kantrowitz for teaching these aspects. However, Kantrowitz provides no teaching of a device having the language system of claim 1, where the language system facilitates "input of the input string and selection of a language character without switching modes between input and selection." Additionally, the combination is improper as there is no suggestion in Ho or Kantrowitz to modify the lookup technique of Ho to implement the claimed bigram language model and word-based N-gram language model. Accordingly, the combination of Ho and Kantrowitz fails to teach the device of claim 8. For these reasons, claim 8 should be allowed.

Ho + Kiraz

Claims 12-13, 34-35, and 43-44 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ho in view of U.S. Patent No. 6,307,541 to Kiraz (hereinafter, "Kiraz"). Applicant respectfully traverses the rejection.

Dependent claims 12-13, 34-35, and 43-44 depend respectively from claims 1, 29, and 37. The Office recognizes that Ho does not teach the language system defined in these dependent claims, but cites Kiraz for their teaching. However, Kiraz fails to provide any of the teaching absent from Ho as to the devices and methods of base claims 1, 29, and 37. Accordingly, the combination fails to teach or suggest the claims 12-13, 34-35, and 43-44.

Additionally, it is unclear how the teachings of Kiraz would be implemented in Ho. Ho teaches a simple database correlation between a pre-defined set of phonetic symbols stored in pre-defined virtual keyboard table 420 with Chinese characters stored in Chinese-character database 410. (*Ho*, Fig. 4). It is unclear how the complex speech recognition system would be implemented in Ho without destroying the basic concepts of Ho. Accordingly, if this rejection is maintained, Applicant requests that the Office provide more information as to how this combination is suggested by the references and would thereby ultimately be made by the skilled artisan.

Ho + Matsuzuka

Claims 14, 27, and 51 are rejected under 35 U.S.C. § 103 as being unpatentable over Ho in view of U.S. Patent No. 5,838,972 to Matsuzuka et al. (hereinafter, "Matsuzuka"). Applicant respectfully traverses the rejection.

Dependent claim 14 depends from claim 1, and hence includes the features therein. Ho does not teach or suggest the aspects of claim 1, including a "language system being configured to facilitate input of the input string and selection of a language character without switching modes between input and selection." Matsuzuka fails to add any relevant teaching with respect to this feature. Accordingly, the combination of Ho and Matsuzuka fails to teach or suggest the device of claim 14.

Independent claim 27 defines a system comprising:

> a resident language model residing on a mobile device to convert phonetic characters input into the mobile device into language characters using a first statistical language model; and
>
> a nonresident language model residing on a server remote from the mobile device, the nonresident language model being configured to convert the phonetic characters into the language characters using a second statistical language model.

The cited combination of Ho and Matsuzuka fails to teach or suggest the claimed system. First, neither Ho nor Matsuzuka teaches a "resident language model residing on a mobile device to convert phonetic characters input into the mobile device into language characters using a first statistical language model." As noted above, Ho does not employ a statistical language model. Matsuzuka fails to provide any teaching of a "mobile device to convert phonetic characters input into the mobile device into language characters using a first statistical language model." For this reason alone, claim 27 is allowable.

Secondly, neither Ho nor Matsuzuka teaches a system with *both* a "resident language model residing on a mobile device" and "a nonresident language model residing on a server remote from the mobile device." Ho describes a mobile

device, and Matsuzuka refers to a remote server model where a language model is executed on a remote server, rather than the client. However, neither reference teaches that the two could or should be used together such that one language model resides on the mobile device and the second language model resides on the server. Indeed, without Applicant's claim as a roadmap, there is no express teachings in Ho and Matsuzuka that would even suggest such a combination. For this additional reason, claim 27 is allowable.

Independent claim 51 defines a method comprising:

> receiving an input string entered via a keypad on a mobile device;
>
> sending the input string to a remote server;
>
> generating likely language characters based on the input string at the remote server; and
>
> returning the likely language characters to the mobile device for display.

For similar reasons noted above with respect to claim 27, the Ho/Matsuzuka combination fails to teach or suggest this method.

Ho + Chang + Hon

Claim 25 is rejected under 35 U.S.C. § 103 as being unpatentable over Ho in view of Chang and further in view of Hon. Applicant respectfully traverses the rejection.

Dependent claim 25 depends from claim 24, and hence requires "a language system to receive an input string of letters from the alphabet entered via associated number keys of the keypad, where the input string of letters is

representative of one or more phonetic characters, and to convert the phonetic characters to language characters that are not part of the alphabet using a statistical language model that utilizes at least one neighboring word in a common sentence."

Ho, Chang, or Hon, taken alone or in combination, fails to teach or suggest the claimed device. For these reasons, claim 25 should be allowed.

Ho + Matsuzuka + Kantrowitz

Claim 28 is rejected under 35 U.S.C. § 103 as being unpatentable over Ho in view of Matsuzuka and further in view of Kantrowitz. Applicant respectfully traverses the rejection.

Dependent claim 28 depends from claim 27. For the reasons given above, Ho and Matsuzuka fail to teach the system of claim 27. Kantrowitz does not offer any of the missing teaching. Accordingly, the combination of Ho, Matsuzuka, and Kantrowitz does not suggest the system of dependent claim 28.

New Claims

New **claims 52-60** are believed to be allowable over the cited art of record. Applicant respectfully requests consideration and allowance.

Conclusion

Claims 1-60 are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of the subject application. If any issue remains unresolved that would prevent allowance of this case, the Examiner is requested to contact the undersigned attorney to resolve the issue.

Respectfully Submitted,

Date: Oct. 5, 2004

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